EXPANDABLE COMPUTER NEWS

NEWS

AMSTRAD BUYS SINCLAIR

SEARS TO MARKET

AMSTRAD PRODUCTS

ISSUE 14

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We welcome contributions of original articles, programs, reviews, comments, questions, etc. We are unable to pay for such contributions at this time. Please include a signed statement giving us authorization to use your contribution. We would like to thank all of our subscribers for their assistance–without them this publication would not be possible.

Sage Enterprises has available for sale a number of products for the ADAM Family Computer System as listed below. To order any of these products send check or money order payable to Sage Enterprises in U.S. Funds to the address listed above. Missouri residents please add sales tax. All prices include shipping and handling.

ITEM	Foreign Price	U.S. & Canadian Price
Blank Data Pack (Loranger)	$8.00 US	$5.52 US
PACKCOPY software copier	$45.50 US	$41.50 US
CONVERT CP/M Disk Transfer Program	$40.95 US	$36.95 US
Program Library I, II, III (price each)	$13.30 US	$9.95 US
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ALL SOFTWARE NOW AVAILABLE ON DISK OR DDP

Ramblings From The Ridge
by D. Sage

Every issue things seem to change. Due to other commitments, I am no longer available by phone at least not for the next couple of months. In addition, I will be forced to miss the Summer Consumer Electronics Show in Chicago.

Although this will have little bearing on the ADAM, I do like to keep in touch with what is going on in the industry.

If any of you who live in the Chicago area plan on attending, I would appreciate hearing any news on new products (a copy of appropriate brochures would be helpful, in case I need to contact the company).

I recently received a letter from J.P. Dayton, Manager of Consumer Service at Coleco. He has indicated that Jeopardy, Best of Electronic Arts, and a version of SmartBasic II have never been released by Coleco. He further indicates that if such products do not carry the Coleco trademark, and "it does not delude to Coleco in any way, we have no problem with its disbursement." This statement while positive is a long way from placing such products officially in the public domain.

On another note, at a time when illegal copying of software seems to be on the increase, sales of legal ADAM products have begun to decline.

Oddly enough, software sales seem to be more affected than sales of hardware and supplies. If this decline continues, it is unlikely that you will see much in the way of new products.

We are hopeful that this is only a temporary phenomena, but have placed future projects on the back burner for the time being.

This issue has suffered a relatively large decline in advertising. As I indicated when ECN was started, the basic length of articles and other information will not be affected by the presence or absence of advertising. Essentially, ECN will continue to have approximately 20 pages of text regardless of the presence of advertising.

I have repeatedly indicated that we try to print your reviews. When possible we try to include multiple reviews of products where there is some divergence of opinion about a product, but try to impart the overall general feeling when too many reviews are received to print them all.

If we receive a number of positive reviews of a product then those will be given the most weight.

Your opinions can only be printed when they are received by us. In the last issue we carried a review of PrintShop/PrintShop Extra, by CME Software. Some of you have indicated that you feel this product is better than the review indicated.

Since I have not seen the product I cannot express my opinion. If you feel it deserves another look, then send in your review and we will publish it, remember this applies to all products. Always try to remember not to judge a product by just one review. Different people have different preferences and will evaluate products in terms of those preferences.

Try to do the best job you can in writing the review so that it is clear and understandable. If you rate a product high and then pick it apart or rate a product low and then praise it, your review is unlikely to be printed.

Now for some good news. I have been advised by Don Perlman (201/867-7038) that he has access to disk drives, modems and other hard to find ADAM products.

Send a SASE to Don Perlman, 620 Harmon Cove Towers, Secaucus, NJ 07094, for more information.

The COMPUTER SHOPPER, P.O. Box F, Titusville, FL 32781, still lists the ADAM USERS of AMERICA, P.O. Box 6307, Huntington Beach, CA 92615 as well as the FIRST SOUTHERN CALIFORNIA ADAM UG with the same address.

The last time I talked to Strategic Software, they indicated that Multi-Write was near completion.

Steve Jacoby, P.O. Box 11205, Clearwater, FL 33516, has available a speech synthesizer and software for the ADAM.

This issue contains some differences. We have added a column on LOGO, a beginner's column on SmartBasic and one rather long program.

Jim Guenzel has submitted a lengthy LOGO program.

We will try to alternate between long and short programs in order to satisfy your requests.

It is difficult to satisfy everyone. Some of you want more technical articles and long programs, some of you want more elementary articles and shorter programs, so I have tried to reach a compromise by periodically offering both.

I hope that all of you will find this issue enjoyable.

Remember, the number on your address label indicates the last issue of ECN you will receive unless you renew.

We will send only one renewal notice. We hope that you will stay with us and help keep ECN alive through another interesting year.

Back Issues

Only copies of Issues 1, 2, 8, 9, 10, 11, 12, 13 remain. These are $3 each. Because of lack of demand, it is unlikely that any of the unlisted issues will be reprinted.

Industry Observations
by D. Sage

Amstrad has apparently closed its Chicago offices now that they have reached an agreement for Sears to be the exclusive distributor of their computers in the U.S. and Canada. At the same time it has been announced that Amstrad has purchased ailing Sinclair Research Ltd. The result of this purchase gives Amstrad between 60 and 80 percent of the

installed base of home computers in England. Amstrad has indicated that they intend to continue some of the Sinclair line, but it is likely that the QL will not be among those products retained.

Amstrad has announced plans to sell the PCW8256 through Sears. The 8256 has some similarities to the CPC6128 that was reviewed last time, but has a number of enhancements. It comes packaged with a high resolution monitor (90 x 32 characters) and a letter quality dot-matrix printer. An RS-232 and Centronics interface is optional as is a second disk drive. The system runs CPM+, extended Locomotive Basic and OR LOGO and is said to include superb word processing software (where did Coleco go wrong). Essentially the system appears to be fully compatible with the 6128.

Look for Sears to list the Amstrad products in the August released Christmas catalog. I do not expect to see an earlier introduction outside of the major metropolitan areas.

Meanwhile, back on the home front Atari's 520 ST continues to sell successfully, despite all of the predictions seen in the press. Meanwhile Commodore cut the price of the Amiga by $500 in order to increase sales. Some reports indicate that the ST may be substantially outselling the Amiga. Now that Amstrad

has made a formal move in the U.S. and Canadian markets, will Commodore and Atari sit idly by pushing their higher end products and ignoring the lower end? All we can do is watch and report on future developments.

For those of you wanting to contact INTV (owners of the Intellivision). Their address is: INTV Corp., 21535 Hawthorne Blvd., Torrance, CA 90503.

Beginning Basic
by D. Sage

Many of you are novices when it comes to using a computer and have generally confined your use of the ADAM to SmartWriter. As the result of a number of requests for a beginner's column on SmartBasic, I will try to fill this need with this column.

When you first turn ADAM on, it comes up in the typewriter mode. If you press the ESCAPE/WP key, SmartWriter comes up. But, your ADAM can do more, it can run a variety of programs that are loaded by pulling the computer reset switch or play Colecovision cartridges by pulling the cartridge reset switch. It can also load various languages such as SmartLOGO and SmartBASIC that are loaded by inserting the appropriate disk or data pack and then pulling the computer reset switch. These languages include a number of commands, but essentially, by themselves these languages do nothing. To use them you must either have a program that is already written or you must use them to write a program.

Some of you will only use these languages to load and run programs written by others and will never write a program of your own. In this issue I will cover the instructions for loading, running and listing Basic programs and for accessing the directory of data packs and disks.

Once SmartBasic is loaded, you can list the directory of any data pack or disk that contains SmartBasic compatible files and programs. To do this simply insert the ddp or disk you want to "catalog" in the appropriate drive. To list the catalog, type in the following command:

CATALOG, dn [RETURN]

In this case dn represent the drive you want to catalog and should be d1 or d2 for data drive 1 or data drive 2 respectively. For the disk drives you should enter d5 or d6. [RETURN] means to press the

"RETURN" key on the keyboard. If you enter the command correctly and reference the correct drive, a listing of the contents of the disk or data pack will appear on the screen. If the listing is longer than 24 lines it will scroll off the top of the screen. This scrolling can be stopped by holding down the "CONTROL" key and pressing the "S" key at the same time. To start scrolling again press the "CONTROL" and "S" keys again.

If you want to print out the catalog, then type in the following:

PR#1 [RETURN]
CATALOG, dn [RETURN]
PR#0 [RETURN]

PR#1 turns on the printer and PR#0 turns off the printer.

In order to "RUN" a program in BASIC, make sure you have the ddp or disk containing the program inserted in the appropriate drive (most programs are written to run from either data drive #1 or disk drive #1, some programs will run from any drive). In this case our example program is named, PROGAM and is on a data pack in data drive #1. To run this program you would type in the following:

RUN PROGAM, d1 [RETURN]

The program will load and then run. If you want to load a program, but don't want to "RUN" it immediately (you may want to list it to see how it is written), then type in the following:

LOAD PROGAM, d1 [RETURN]

To list this program after it is loaded all you have to do is type in "LIST" followed by a return and it will be listed on the screen. To print it out after it is LOADed, do the following:

PR#1 [RETURN]
LIST [RETURN]
PR#0 [RETURN]

The program listing will then be printed out on the printer as well as the screen.

As space permits, we will cover more Basic commands in the next issue.

More On SmartWriter
by David L. Weldy

My hearty thanks to Robert Keefer for his tips in "Using SmartWriter Effectively"; however, there are several facets to SmartWriter that I have not seen mentioned in any newsletter.

Like Mr. Keefer, I also wrote my Ph.D. dissertation on ADAM's SmartWriter - all except the final draft. But I'll get to that in a bit. I agree wholeheartedly that files need to be kept short. It has already been mentioned by many that access is easier and if something goes wrong, you lose less with short files.

In addition, when you edit a file and store it to the same file name, the revised version is stored before the oldest backup is deleted. If you already had a file and a backup file by the same name on your storage media, you must always have enough room for a third copy.

If the file is large, there may not be enough room, whereas if it is broken up into smaller pieces there may be plenty of room. In addition my ADAM has difficulty saving long files (e.g. 20 pages) to tape or disk. I try to keep files to 5-10 pages in length and end at the bottom of a page or at a new heading so printing is easier.

The reason that the final copy of my dissertation was done on another machine was that variable line spacing is very difficult (not impossible) on SmartWriter, and the problem with extra line feeds with the hard carriage returns makes life difficult at best on a 114 page document.

In the process of transferring the files by modem, I discovered another idiosyncrasy of SmartWriter. When you delete a section of text, it is not really deleted. SmartWriter simply places a transparent control character before and after the text to make it invisible to the print (to screen or printer) routine.

These characters can make themselves known by telling the receiving computer to quit accepting data or to end the transmission. I finally had to transfer the files to CP/M before transmission could be accomplished.

You should note that SmartWriter was never intended for writing dissertations (not a normal home

function and some would debate that it is simply not normal). It is quite satisfactory for home use and works well.

Again, thanks to Mr. Keefer for his tips. I hope these additional comments will help others avoid some of the pitfalls I encountered.

Using SmartLogo
by Mike Degner

As many owners of SmartLOGO, who have used other versions of LOGO, know the SmartLOGO package is one of the best implementations of LOGO available. LOGO is different from Basic and other languages, in that the programmer creates new commands or primitives, which can be used by just calling the procedure name.

People often buy LOGO because of its easy graphics capabilities, so we will start off with the graphics part, then proceed to other aspects of LOGO. By now most of you have experimented with the drawing commands, so we will proceed without reviewing them.

To make a new procedure, you have to start out by calling the editor with the command:

TO (name of the procedure)

The editor will respond with the same line without the carriage return. Now you can type in any variables you want to include, otherwise press return and type in your instructions. Once you are finished typing in the instructions, press SmartKey VI to define it. Now any time you type in the procedure name it will carry out its instructions. If, while typing in the procedure, you make an error you can delete it using the backspace or delete key. The delete key will delete the character above the cursor and move the whole line back one space. The backspace key will delete the character to the left of the cursor and move the whole line one space. You can use the insert key to insert a line above the line with the cursor in it.

Now we will make an example procedure to experiment with. Type in the following as it is shown, without the part shown in parenthesis.

TO SQUARE
CS (to clear the screen, could be omitted, could also use HT to hide the turtle)
PD (puts the turtle's pen down, the following is the main part of the procedure)

FD 40 (moves turtle forward 40 spaces)
RT 90 (turns right 90 degrees)
FD 40
RT 90
FD 40
RT 90
FD 40
END

Now define the procedure and try it by typing in "SQUARE". This is a lot easier than typing that in over and over again to draw a square. But this isn't the most efficient way to draw a square. Delete the body of the procedure and replace it with: "REPEAT 4 [FD 40 RT 90]. This tells the turtle to repeat the instructions 4 times.

Another problem with our procedure is that it only draws a square 40 X 40. To solve this, LOGO allows the programmer to use a variable after the procedure name. This variable can be used to set the size of the square. The following procedure does this:

TO SQUARE1 :SIZE (the variable name must have a colon in front of it)
PD
REPEAT 4 [FD :SIZE RT 90]
END

Now all you have to do is type in the name followed by a number. You can use any number of variables in a procedure, just follow the above example with a space after each one.

If you insert the instruction "SQUARE1 :SIZE+10" at the end of the procedure, the turtle will draw a new square 10 sizes bigger and will continue doing so until you press the ESCAPE key.

That is all for this issue, try experimenting with making a procedure that has two inputs and will draw a shape with the same number of sides as the second input. If you have any questions, comments or other information concerning SmartLOGO, send a SASE to the following address: Mike Degner, RR 2, Box 293, Shell Lake, WI 54871. See you next issue.

ADAM System Calls
by D. Sage

This is the fourth in a series of articles covering ADAM'S system calls. This column will continue until all calls have been covered.

CALL FC7E$ (64638) - Initiate a status request command. IY register contains the address of DCB and error code, if any, is returned in register A.

CALL FC81$ (64641) - similar to preceeding but requests status of keyboard.

CALL FC84$ (64644) - status of printer.

CALL FC87$ (64647) - status of data drive.

CALL FC8A$ (64650) - scan active devices. 1 DCB allocated for each device identified by a status request.

CALL FC8D$ (64653) - initialize the I/O processor with control area at value in register HL.

CALL FC90$ (64656) - reset the device whose number is in register A.

CALL FC93$ (64659) - reset the keyboard.

CALL FC96$ (64662) - reset the printer.

CALL FC99$ (64665) - reset data drive.

CALL FC9C$ (64668) - start-up typing a string to the printer, but does not wait for completion. Register HL contains the string.

CALL FC9F$ (64671) - start-up typing a character to the printer, but does not wait for completion. Character is in register A.

CALL FCA2$ (64674) - start-up a block read for device in register A. BCDE is the physical block to read and register HL contains memory location to store data.

CALL FCA5$ (64677) - start-up a byte read for device in A. BC contains the byte requested and DE the destination for storing the byte.

Telecommunications
by Joe Blenkle

Ever wanted to run your own Bulletin Board System? Well now you can with a brand new piece of public domain software created by Alan Neeley from Do Not Stamp Software's original BBS Kit program.

The BBS program, while not as fancy as some of the ones you'll see run on other computers, does work, and it has most of the features found on other BBSs. The program comes in four parts: BBS, BBSMBC, BBSDL and BBSAID. BBS is the introduction, so to speak, with the main log-on sequence. BBSMBC contains the main body of the BBS program and BBSDL contains the routines for up and downloading files.

Unfortunately, like ADAMLink II, the program can only handle "Capture Protocol" and does not feature XMODEM transfers...at least not yet. It may at some time in the future. The BBSAID program is designed so the SYSOP can access and write to the message, password, directory and bulletin files.

Some of the other features of this Bulletin Board system include leaving and receiving messages (you'll even be notified at log-on if you have messages waiting), viewing bulletins posted by the SYSOP, and a CHAT section where you can talk on-line with the SYSOP.

The BBS program has been written in such a way that it is possible to have your ADAM auto-answer the phone. Ordinarily, the program will answer a call when the joystick fire button is pressed. It's possible to build a device, however, that will send a a "fire button pressed" signal through the joystick port when the phone rings. Having spent the last couple of months calling my ADAM from my Atari this way, I can vouch that it works too!

I might also add that early versions of the program created a "Stack Overflow Error" when messages were saved. This has now been fixed and anyone having a version of this program that creates the error should make the following changes in the BBSMBC program only: switch lines 1960 and 1965 around; change the variable "i" to "d" in lines 4024, 4025, 4027, and 4028.

I have now included this program (as well as the old DNSLINK version) on my public domain disk #1 BASIC utilities. It, along with #2 Basic Games and #3 MEX (CP/M) are available from me for $5 per disk or $7 per ddp. Joe Blenkle, P.O. Box 41746, Sacramento, CA 95841. I am working on other program disks as well and will send a list if you send a self-addressed stamped envelope.

Mailing Labels From SmartFiler
by Patrick Hayes

For about a year I have been using SmartFILER to maintain records and produce mailing labels for two membership clubs to which I belong. The system I use is a bit crude, but it functions satisfactorily and I haven't had to buy an additional filing program. My file records have numerous other fields besides the standard address info. SmartFiler has trouble producing a standard address label because of the 1/2 line spacing error created after each record. I purchased a box of AVERY #5360 copier labels which are 1 7/16 by 2 13/16. I print the mailing list on fanfold paper using this format:

return
return
return
return
return
[first name] [last name]
[address]
[city],[state] [zip code]

The format is produced and stored in SmartWriter using 1 and 26 margins. I then take this long printout, cut it vertically as wide as the print-ing, then cut the records into groups of seven. These strips are rubber cemented onto blank paper and then this master is photocopied onto the label stock producing 21 labels per sheet. It is a bit time consuming to do the cut and paste and you need a copier handy, but the oversize

labels allow for adjustment of the 1/2 line spacing errors.

Now that I have a tractor feed, I purchased a box of AVERY #4146 labels. These are wider (4") and allow a print format with margins at 1 and 38. When printing labels in SmartFiler, the printer stops at every 6th or 7th label and assumes you are changing single sheet paper. This allows you to move the platen to adjust out the 1/2 line spacing error.

I said it was crude, but the alternative is to buy a new program and then type all of my database over again!! It took a little practice and waste to set this up, but I can produce 75 labels without any problem.

CP/M And ADAM
by D. Sage

John Moore has submitted a number of articles on CP/M in the past and has been kind enough to contribute additional articles on this subject. In order to assist you I am including this brief article that defines three of the basic terms that are referenced by some of his articles.

CCP - CONSOLE COMMAND PROCESSOR - The CCP is essentially the interface between keyboard commands issued by you and you. It interprets the keyboard commands given at the "A" prompt and causes CP/M to execute the proper command or issue an error message.

BDOS - BASIC DISK OPERATING SYSTEM - BDOS is not accessible directly from keyboard commands, but is accessed by the CCP or a transient program such as MADAM7.

BIOS - BASIC INPUT/OUTPUT SYSTEM - the BIOS is in a sense the interface between CP/M and the hardware configuration of your computer.

TPA - TRANSIENT PROGRAM AREA - this is the portion of memory used to store CP/M programs such as MADAM7.

I realize this is brief and there are many more terms used in CP/M, but it is a start and should be helpful in at least knowing what these terms are used for.

CP/M And You - Part 1
by John Moore

You've read about CP/M, you've learned the main parts: CCP, BDOS, and BIOS; but it all seems Greek to you. The question I hear most often is, "What will CP/M do for me and my ADAM?" Without meaning to be equivocal, the answer is very little - and a lot!

To try another route toward understanding, let's leave computers for a moment and imagine a world where you must visit a restaurant whenever you are hungry. In these restaurants, however, you must get your own meal. Imagine the confusion as you had to find the kitchen, look through the storage areas for food, locate utensils, plates, even salt and pepper. You would probably manage to feed yourself, but with much inconvenience and wasted time!

Now think of the same situation with the addition of a waiter and service staff. The waiter takes your order. He knows where the kitchen is, and to what sections your order should be distributed. When the kitchen completes its work, he gathers your order together and presents it to you.

CP/M is your waiter. In most cases, we don't care exactly how the kitchen processes our order, as long as the correct food is brought to us, properly prepared. Likewise, we don't care about individual differences between computers as long as we can give the same order to all - and get the same results!

It was this idea that led to the genesis of CP/M. The desire to run programs written on one computer and still be able to run them on other computers. The only requirement was compatible processors. At one time, even the CP/M disk format was specified to be the same for all systems. Unfortunately, 5 1/4 inch floppy formats have proliferated so that this is no longer the case.

Our orders to CP/M may come in the form of direct commands or programs. CP/M has only a few built-in commands (such as DIR and TYPE). This no-frills approach exists because CP/M was created in an era when memory was scarce and expensive. The system was pared down to the bare minimum so that there would be room for it and a runnable program on a small computer.

CP/M does not do much. It simply allows you to run (with little alteration), programs written for other 8080 and Z-80 computers. But since there are literally thousands of such programs, games, utilities, business programs, word processors, etc. that sma11 addition can make a world of difference in the use of your ADAM!

CP/M And You - Part 2
by John Moore

You've probably memorized the parts of CP/M by now, but let's remember the names and functions: CCP takes input from the keyboard, loads and runs programs; TPA is where your programs are in memory (it's all the memory not used by CP/M); BIOS tells CP/M how to handle the chores of input and output on ADAM (it's the only part of CP/M that is different on different computers); and BDOS, the Basic Disc Operating System.

Yes, even if you only have tape, you have BDOS. BDOS does far more than handle disc or tape operations. In fact, BDOS is the key to the primary reason we use CP/M at all - INTERCHANGABILITY!

The inventors of CP/M came up with a list of functions that would be necessary to programmers. You will find a complete list in the back of your ADAM CP/M manual on page C118. Programmers know that to accomplish a given function on any CP/M system, all they must do is put the number of that function into the "C" register of the Z-80 micro-processor and execute a call to BDOS.

So whether you're running CP/M on ADAM or a ZORBA or a Heath/Zenith, if you put a zero in Register C and CALL BDOS, CP/M will reset the system. If you were to use function 12, the system would tell the program what version of CP/M was running. Many programs use this function to be sure that they are being run on the version of the system for which they were designed!

There are other functions, too, one's whose purpose is a bit more understandable to a novice programmer: functions to open and close files, to get input from the keyboard, and to print output on the screen (function 9).

In this article we are going to create an assembly language program to use this function. It will give you a slight taste of assembly language, and an idea of why being able to use it may not be the sort of thing you would do for all purposes.

We will assemble our program using DDT, so run that program by typing: DDT (return). When DDT loads, you will see the prompt "-". Type A100 (return). This tells DDT that you wish to assemble a program starting at address 100 H. All CP/M programs in standard systems load into memory starting at 100 H. I might mention that all numbers DDT uses are hex numbers.

Now type: MVI C,9 (return). You have just created code that tells the computer to move the number 9 into Register C. This is the "Print String" function. When BDOS is called, it will look at Register C to find out what to do.

Next type: LXI D,200 (return). This instruction will tell BDOS that it will find the string you want printed starting at memory location 200H. Now type CALL 5 (return). This is the call that starts BDOS. In all standard CP/M systems, CALL 5 will bring BDOS into operation.

All programs run under DDT must end with the instruction: RST 7. So type that and hit (re-turn). Type a period followed by (return) to get out of assembler mode. That's it! Your first program, but remember, CP/M will expect to find something to print at memory location 200H, so we'd better make sure there's something there!

Type: S200 (return). This tells DDT that you want to directly set memory values starting at location 200. Type in the following hex numbers exactly. Type a (return) after each number. Do NOT type in the commas. OC, OA, OA, OA, 48, 65, 6C, 6C, 6F, 20, 74, 68, 65, 72, 65, 21, 20, 20, 49, 27, 60, 20, 41, 44, 41, 4D, 2E, OD, OA, OA, 24.

I will give you two comments that might answer questions. The code OC at the beginning of the string is the control code that clears ADAM's screen and homes the cursor. The 24 at the end is the hex value for "$". This is the character chosen by Digital Research to end CP/M strings.

OK, type a period followed by (return). Your program is now in memory. You can start it running by typing G100 (return). This is short for go to location 100 and do what it says there! Did you get the message?

Yes, a PRINT statement in BASIC is a lot easier to use, but not all BASIC commands will work on all systems. The program you just created will print the message on any computer running CP/M 2.2. The only question is whether OC is the correct clear screen code. This is why certain programs have to be "configured" for ADAM before they can satisfactorily be used.

Oh yes, if you want to save your program, you should know that it will not run properly except when you run it under DDT. If you want to create a version that you can run straight from disk or tape, you will have to get rid of that "RST 7" instruction.

Since you are still in DDT, go back to step 1 and re-do the program, but this time, instead of RST 7, type: JMP 0 (return). This is the CP/M standard warmboot instruction that is used to end almost all CP/M programs. Type a period (return), GO (return), and SAVE 2 MYPROG.COM (return).

Glitches, Bugs, Errata, Etc.
■ John Moore has advised me of an error he made in "CP/M Games On ADAM" which appeared in issue #13. Two bytes were left out of the Infocom Game listing by mistake. Unfortunately they are crucial. The number of characters per line goes at 103H. If you have a good monitor, use 1E. Most televisions are overscanned, so 1D will work better. The number of usable lines per screen is at 104H. Use 17 here. All changes with DDT along with the others and you will have everything working all right. (NOTE: This has been corrected in the PDF Issue #13).
■ From Clint Wormsbecker: I have talked to a service representative at Coleco Canada regarding the issuance of the carrier signal on the modem prior to the completion of the ADAMLink dialing. I was informed that this is due to a bug in the software programs, both ADAMLink I and II. To avoid this problem I use the two-way adapter supplied with the modem. I connect my phone to the adapter. I then

enter the number I want to call into the ADAM and start the dialing procedure as per the ADAMLink software - Note: the modem is not plugged into the adapter yet. I then use my telephone to dial the number I want to reach and listen for the call to be answered. I then plug the modem line into the adapter, ADAM is then on line. Norm Vienneau sent in a similar solution to the one listed above from Clint Wormsbecker.

■ Bert Cook sends this tip for SmartLogo: When playing music the garbage collection causes problems. This can be remedied somewhat by using the "RECYCLE" command at a convenient spot such as the end of a bar. It's better to have the hitch occur when you want it than in the middle of a bar. It can also be done during a rest in the music.

■ Timothy Ferdinand points out that when using the Eve SP-1 with another printer occasionally his printer will print in condensed mode because of control characters. To restore normal print all you have to do is turn the printer off and back on.

Bulletin Board

■ **WANTED:** to buy different types of accessories, hardware & software for the ADAM computer. Send list, condition, and price to: Steve, P.O. Box 4323, Midd, RI 02840.

■ **WANTED:** To buy or trade for Spy Hunter and One-on-One. Also need a copy of the disk drive instruction manual. Also would like to hear from other ADAM owners in my area. Contact: Hector Sanchez, 3606 Swiss, Corpus Christi, TX 78415, ph. 512/854-9754.

■ **WANTED:** Super Action Football, Star Trek and Illusions game cartridges. Contact: Jim Biggs, 7016 Putt Lane, Fort Wayne, IN 46815.

■ **FOR SALE:** Original Cartridges, Data-Packs and Disks for Colecovision or ADAM. Like NEW, in the box, with instructions. Send SASE for list and prices to Stanley M. Siembor, 378 Sunningdale Dr., Inkster, MI 48141.

■ **FOR SALE:** I have the following items still for sale: Cartridges - The Heist, Keystone Kapers, Sir Lancelot and Squish 'Em $5 each. Woodgrain Coleco or Atari 2600 cartridge holders (2) $12 each. Public domain programs $5 per disk or $7.50 per DDP: #1 Basic Utilities/Demos, #2 Basic Games (both disks use both sides), #3 MEX CP/M Communications, #4 LOGO programs. I'm working on other combinations as well. Send SASE for list. Joe Blenkle, P.O. Box 41746, Sacramento, CA 95841.

■ **FOR SALE:** Nintendo Game System, includes 4 carts-Excitebike, Gyromite, Duck Hunt, Hogan's Alley. Also includes robot, light gun, and all accessories. Excellent condition, $180 plus $10

shipping. Coleco Auto Dialer, with Address Book software (ddp), $20 plus $3 shipping. Dragon's Lair (ddp), $10 plus $1.50 shipping. Contact: Lee Smith, 105 Donna Drive, Box 338, Terre Hill, PA 17581.

■ **FOR SALE:** New Super Action Football (never opened) send SASE to Scott Gordon, 12503 Kingslake Dr., Reston, VA 22091.

■ **FOR SALE:** ADAM cartridge games, books, data pack software, and some hardware. Items to numerous to list. Send SASE for details. Contact John Bonavita, 1113 Bedford, Grosse Pte. Pk., MI 48230.

■ **NOTICE:** I have written a program in Basic to balance water flow in a water distribution system. It is based on the Hardy Cross method of analysis. I have tried it on three textbook problems and it gives the correct answers. Since I am a civil engineer, I use it in my work. I will be happy to send a copy to anyone who wants one if they will send me a legal sized SASE. Owen McNulty, 2205 Peach Tree Street, Florence, SC 29501.

■ **WANTED:** Aquattack, Q*Bert's Qubes, Dragonfire, Tournament Tennis, Wing War, and Quest for Quintana Roo. Contact: Clint Wormsbecker, 97 Arnason Cres., Saskatoon, Saskatchewan, CANADA S7H 4M7.

User Group News

The list of users' groups continues to grow. If there isn't a group in your area to join - start one!

NATIONAL GROUPS

#1 Adam User's Group
Attn Jay Forman
P.O. Box 3761
Cherry Hill, NJ 08034

LOCAL GROUPS

James E. Gilbert
4608 Lakeview Dr.
Huntsville, AL 35810

Victor L. Watford
P.O. Box 777
Russellville, AL 35653

Richard Bains
7210 Bulen Drive
Anchorage, AK 99507

Danny Levitt
4525 S. White Pine
Tucson, AZ
85730
ph. 602/790-9678

Robert R. Marentes
9425 N. 38th Ave.
Phoenix, AZ 85021

Brian Stranahan
So. California ADAM Users
8580 Buggy Whip Rd.
Alta Loma, CA 91701
ph. 714/989-1394

Frank Fleich
13381-19 Magnolia Ave.
Corona, CA 91719

Central Calif. Adam User's Group
James Turner, Jr.
20110 Ave. 19
Madera, CA 93637
ph. 299/ 661-8290

San Diego Adam Users Group
Dr. Harold Alexander
37 Catspaw Cape
Coronado, CA 92118
ph. 619/429-1844

AUG of San Diego County - Sue Askew
868 N. 2nd St. #242
El Cajon, CA 92021
ph. 619/445-2400

Bay Region ADAM Information Network
George Havach
550 27th St. #202
San Francisco, CA 94131
ph. 415/282-3056

Inland Empire Users Group - Mike & Paula Smith
6644 Seine Ave.
Highland, CA 92346
ph. 714/862-5807

Denver ADAM User's Group - Jesse Thornhill, II
1416 Lipan St.
Denver, CO 80204

ADAM Users Group #305 - John F. Busby, II
6634 SW 41st St.
Davie, FL 33314

Playground Area ADAM User's Group
Howard Pines
812 Pinedale Rd.
Ft. Walton Beach, FL 32548

Robert J. Niemeyer
292 Boca Ciega Point Blvd. N.
St. Petersburg, FL 33708

ADAM User's Group
Michael G. Graham
217 Albert St.
Winter Springs, FL 32709
ph. 305/327-1387

ADAM Support Group
John Moore
1870 Fisher Tr. NE
Atlanta, GA 30345

Hawaii AUG
Harlan Fletcher
2335C Apollo Ave.
Honolulu, HI 96818
ph. 808/422-4019

Donald R. Lager
5415 N. 2nd St.
Rockford, IL 61111
ph. 815/877-7786

Kansas Adam Users Group
David E. Carmichael
1325 N. Meridian, Apt. 201
Wichita, KS 67203

KC Users Group
Joe Reardon
1513 Tauromee
Kansas City, KS 66102
913/371-7491

Greater Cincinatti Adam Users Group
c/o Keith Bowman
P.O. Box 434
Alexandria, KY 41001

ADAM Network
P.O. Box 85
East Detroit, MI 48021

Bill & Nancy Rahn
12426-15th St. S.
Afton, MN 55001
ph. 612/436-6577

Downtown Minneapolis AUG
Thomas C. Gilmore
1424 West 33rd St.
Minneapolis, MN 55408

Outsider's Users Group - Donald Viltiard
P.O. Box 771
Starkville, MS 39759

Omaha ADAM Users Club - Norman Castro
809 West 33rd Ave.
Bellevue, NE 68005
ph. 402/291-4405

Al Roginski
4327 Thorndale Pl.
Las Vegas, NV 89103

Metro Adam User's Group
Russell Williams
414 W. 149th St.
New York, NY 10031
ph. 212/208-0645 - (9am-5pm M-F)

Genesee Valley Adam Users
Donald K. Zimmermah
5132 Jordon Road
Silver Springs, NY 14550

ADAM-X-Change (New York & Canada)
Wade Rowley
12863 Washburn
Wolcott, NY 14590

Tri-Angle Adam Users - Gary E. Hill
L-5 Oak Grove
Chapel Hill, NC 27514
ph 919/968-0299

Mutual ADAM Users Group
Matt Esterak
412 Bettie Street
Akron, OH 44306

Lake Erie Adam Users
Jonathan Fligner
2110 W. 36th Street
Lorain, OH 44503
ph. 216/282-8467
between 4:30pm & 8pm EST

Oregon Adam Users
Craig Frerichs
1928 W. Burnside #309
Portland, OR 97209

The (717) Adam Users
Steve Chamberlain
120 E. 4th ST.
Bloomsburg, PA 17815

Midsouth ADAM Users
Roger Burford, Lot 142 NAS MHP
Millington, TN 38053
ph. 901/872-7960

Adam Users of El Paso
Dick Lewin
6308 Falling Star
El Paso, TX 79912

Houston AAUG
c/o Thomas Rutan
1805 14th Ave. N
Texas City, TX 77590

Norfolk ADAM Group
Gerald M. Steen
1000 Rockbridge Ave. #144
Norfolk, VA 23508

ADAM Users Group of Central Virginia
Thomas J. Kelly
3B, Rt. 664
Earlysville, VA 22936

ADAM Washington D.C. Users Group
Jim Tyson
1811 St. Roman Dr.
Vienna, VA 22180

Puget Sound Adam Network
Valorie Zimmerman
22607 SE 322nd
Kent, WA 98042
ph. 206/886-1167
or Barbara Duncan
ph. 206/938-5276 evenings

Dave Sandahl
USNH, Box 2844
FPO Seattle, WA 98778

CANADA
Robert Dunstan
95 Harland Crescent
Ajax, Ontario L1S 1K2
CompuServe ID#75026,3435

Derek Townsend
Box 820
Claresholm, Alberta T0L 0T0

J.A. Girard
1420 Ave. Langevin Sud
Alma, Quebec G8B 6B1

Mike Laurier
7350 Roi Rene
Anjou, Quebec H1K 3G6

Mr. G. Hibbert
P.O. Box 10
Mistatim, Saskatchewan S0E 1B0

First Canadian Adam User's Group
P.O. Box 547 Victoria Station
Westmount, Quebec H3Z 2Y6

Winnipeg Adam Users Group
David Fordyce
729 Government Ave.
Winnipeg, Manitoba R2K 1X5

Metro-Toronto Adam Group
P.O. Box 123
260 Adelaide St. East
Toronto, Ontario M5A 1N0

AUSTRALIA
The Bendigo Colecovision Club
W.R. Oldacres-Dear
C1-2 Fenton St.
Bendigo, VIC 3550, Australia

ADAM Owner's & User's Group
Frank Ellis
4 Norman Street
Deakin, ACT 2600, Australia

High Scores
by Joe Blenkle

Anyone wishing to add their name to the high score list should send the game, score, and level to Joe Blenkle, P.O. Box 41746, Sacramento, CA 95841. Due to space limitations, all games may not be listed in every issue of ECN, entries may be limited to only those scores for which new high scores have been achieved. For a complete list send a SASE to the above address.

GAME	PLAYER	LEVEL	SCORE
Antartic Adventure	Graham Alig	-	339,410
Congo Bongo	Royce MacRae	1	27,800
Cosmic Avenger	Don Rohde	1	152,970
Donkey Kong Jr.	Kyle Alons	1	237,500
H.E.R.O.	Royce MacRae	1	50,285
Omega Race	Christian Labelle	1	183,600
Slurpy	Andy McPhee	1	6,520
Space Panic	Christian Labelle	1	349.470
Subroc	Lillian Glidwell	1	3,635,900
2010: Graphic	Royce Macrae	1	64,820
War Room	Royce Macrae	-	39,900

Product Review: Challenge Ware Games
by Mike Cristiano
Product: Castle of Doom & Dragon's Cavern
Manufacturer: Challenge Ware, 5801 Foxboro NW, Canton, OH 44718
Media: DDP
Requirements: ADAM, SmartBasic
Price: $19.95
Rating: 8

Castle of Doom is a medieval text game adventure. The object of the game is to find and take the following: a green ruby, red diamond, pink gem, blind man's scroll, and the yellow acid of death and throw them into the Fire of Doom. You use words like LOOK, instead of EXAMINE which is a lot shorter, INVENTORY to see what you are carrying, GET to take a certain thing, etc. The game starts off with a title screen using excellent graphics.

Overall, this game is well written and challenging for the beginner.

Dragon's Cavern is a fantasy graphics game using great sprite characters! In this game you control a fantasy knight using the joystick to get past the dragon by first jumping all the other obstacles in the caves. The sprite characters in this game are the best I have seen for Basic. There are many good features to the game. It begins with a good introduction using graphics. The title screen uses Basic sound capabilities to make the game more enjoyable. The tune lasts for about a half a minute and then the game appears. The knight appears in white with a sword in his hand. You can move him forward and backwards. When the game is over, it will store the high score. Overall, I would recommend this program for the ADAM user.

Product Review: More Games For Nintendo
by D. Sage

Since a number of you have expressed an interest in the Nintendo Entertainment System. I will continue to provide brief reviews of some of the games that are available.

After trying out "GOLF" from Nintendo, I am sure any of you who play golf and even those who don't will enjoy this one. It is an eighteen hole course that is at times unbelievable. Off the green you select the club you want to use and control the strength of your swing as well as any hook or slice. You will occasionally wonder how some of these holes managed to have such a low par

score. The only shortcoming is that out-of-bounds shots are played over from where you hit the ball instead of with a drop where it went out. Since some of the fairways are rather narrow this can present a problem and you can easily drop a half-dozen strokes on one hole.

Baseball is entertaining but has a number of annoying problems. When playing the computer it is relatively difficult to win. It picks its team first and you pick from what is left. Each team seems to be somewhat different with most differences showing up in the quality of fielding. Fielding is the part you have no control over and when a ball is hit into the outfield you may find yourself watching your team wander aimlessly around looking for a ball that landed in front of one of them. In the meantime the opposing team has scored all of its base runners. If you get a lead, you can almost forget it. The computer will ultimately outscore you. The best way to win is to keep the game close and hope you get a break near the end.

Tennis is great but tough. You can play against the computer by yourself or with a partner. You can lob, play the net, or play back. At the lower levels you have a chance. If you win a match you precede to the next level and a much more skilled opponent. Eventually, you will probably give up. Points at the higher level require a great deal of skill. If you rush the net too early the computer opponent automatically hits a lob. If your opponent rushes the net, you better lob or the ball will be hit cross court from your position.

Next time more reviews.

Product Review: Centronics Printer Interface
by Lee D. Smith
Product: Printer interface
Manufacturer: Orphanware
Requirements: ADAM
Warranty: 6 months
Price: $50 w/disk software; $55 w/ddp software

This interface allows you to connect to almost any printer. I purchased the Star SG-10 printer and it works real nice with this product.

The interface board is hand built using wire wrap method and appears very neatly done. The board

plugs into the second slot (next to the 64K expander) inside ADAM. This allows you to use the side expansion port for other things. The unit requires a cable to connect your printer. The cable is available from Radio Shack for $14.95 and is about 7 feet long.

I had to file a small notch in the cover over the top of ADAM to bring the cable out to the printer. The software supports printing from SmartWriter, Basic and CP/M 2.2. Orphanware also has a Fastpatch program available that now allows you to print with Smart Letters and Forms. This patch loads in four seconds.

I am really happy to see a source of low cost hardware and software for ADAM. I believe ADAM will be around for a long time with products like this.

Product Review: Centronics Printer Interface (14-2)
by D. Sage
Product: Centronics printer interface
Manufacturer: Orphanware
Price: Review product supplied by manufacturer

I have to concur with the preceeding review. This is an excellent product. It was easy to install and use. The directions are very straight-forward. In less than 10 minutes I had the interface installed and working with my Silver Reed printwheel printer. The interface also worked with our dot matrix printers with no problems.

The product we received was soldered and not wire wrapped and had a very professional appearance. It is my understanding that the interface is now in production and future deliveries should soon be of the soldered type.

Orphanware has provided an excellent product at a highly competitive price. For those who need access to other printers, I recommend this product.

Product Review: Ramtest
by Joe Blenkle
Product: Utility
Manufacturer: Orphanware
Requirements: Disk drive/Adam
Media: Disk
Warranty: 90 days
Price: $12 + $1.50 shipping
Rating: 6

Ramtest, by Orphanware, is exactly that: A test of ADAM's internal 64K memory expander. Ramtest can test any portion or all of the memory expander's memory to see if it is functioning properly. A complete check takes about seven minutes. If any bad locations are discovered, Ramtest will display the bad location and failing test.

While I can't say that Ramtest is a must buy for

ADAM owners, it is a unique utility and once again shows that Orphanware is determined to produce a variety of low cost software and hardware for ADAM owners.

Product Review: 64K Memory Expander
by Mike Degner
Product: Hardware enhancement
Manufacturer: Univeral Interface Systems & Software, Suite 133-20465 Douglas Cr., Langley, B.C., Canada V3A 486
Requirements: ADAM
Warranty: 120 days
Price: $49.95 + $2 shipping in U.S. funds
Rating: 10

After I saw the ad in Family Computing for a memory expander for only $49.95, I was a little skeptical. So I wrote to the company and requested more information. I soon received it and placed an order. The information said it would take 15 days, but my order took a little longer.

It arrived by mail packed in foam and an anti-static bag. The expander looked real professional and came with a complete instruction book for installation.

I have used the memory expander in CP/M and with ADAMCalc and have had no problems. Because of the quality and low price, I see no reason to buy any other.

Book Review: Soul of CP/M
by Robert Keefer
Authors: Mitchell Waite & Robert Lafore
Publisher: Howard W. Sams & Co., Inc.
Price: About $17 at Encore Books
Rating: 9

If you have purchased the ADAM CP/M 2.2 and you want it to do more than just run CP/M applications programs, this is the book for you. The book promises to teach system calls and a goodly amount of assembly language, and it does just that. The authors do NOT promise to teach you all the "bells and whistles" of assembly language, but it certain-ly covers enough ground to MORE than just get you started at writing your own CP/M programs.

Right up front, let's be honest and say that to really get your moneys' worth out of this book, you should have a pretty good working knowledge of BASIC. I don't mean that you need to be able to write your own spreadsheet or anything like that, but you should thoroughly understand the principles behind "IF..THEN", "GOTO", "GOSUB", etc. If you know what "PEEK" and "POKE" mean, that will help a lot (not absolutely necessary, but it will help).

CP/M allows you to directly address the heart of your ADAM, the Z80 chip that makes it work. The

book is written specifically for the 8080 chip, which is actually "older" than the Z80, but all the information here applies to any of this series of chip.

The book covers both the BIG picture (how CP/M is organized) as well as teaching specific techniques of writing programs. Wisely, the authors start off NOT directly using the assembler, but using a wonderful utility called DDT (Dynamic Debugging Tool), which actually includes a "mini-assembler" and allows you to begin writing working programs almost at once. Soon, you cover how to send information to specific output devices, including the disk drive.

There is a chapter on including assembly language (A-L) routines in your BASIC programs; while this information is helpful, it does not relate directly to SmartBASIC. You'll have to do a little translation to our particular brand of BASIC. If you have MBASIC in CP/M, no translation will be necessary. The authors also include some utility programs that you can type in yourself; this is a good way to see how others have solved problems in writing A-L routines. There is even a 'mini-space invaders' game for games programmers to see what is possible in the way of games. (Actually this is not much of a game, so don't get too excited).

Also interesting is a way to recapture 'deleted' files by directly reading supposedly blank addresses on a disk; these addresses are 'lost' when you delete a filename, but the information is not erased until the computer stores other information at those locations. If you've erased something important and wished you could get it back, this could be your answer.

To complete the picture, with this book you can even learn to modify CP/M to meet your own needs. This means that you can send information to output ports that have previously been unavailable to ADAM users (for example: the RS232 port). And, if you're clever you should be able to install a new 'print driver' into your BIOS so as to, for example, run a dot-matrix printer, or practically any peripheral you could hook up to your ADAM. As the authors write in the final section of the book, "the sky's the limit!"

A final caution; this book is not for the casual user. It will require real work to learn enough A-L and systems calls to be useful. But the promise of self-written CP/M utilities is enough to keep this ADAM user plugging away! The price is steep for a paperback, but the information is worth its weight in Z80 chips. The '9' rating is because the book does not address certain features that might be good to know (for example, none of the interups are covered, partially because they are apparently different on different 80-series chips). Nevertheless, this book is about as fine an introduction to system calls and A-L as you could buy for any money. Given the

disclaimers already mentioned, I recommend this book in the strongest terms possible. A must-have for serious programmers.

Review: Turboload
by Craig Thompson
Product: Basic speedup
Manufacturer: Strategic Software
Media: DDP
Requirements: ADAM, version 79 SmartBASIC
Warranty: 90 days
Price: $29 from Alpha-1
Rating: 10

TurboLoad will convert any BASIC program into a new highly efficient version. Strategic claims improvements up to 10 times faster loading. I believe it too, from the several programs that I have "turbo-charged." PowerPrint takes about 2 minutes 20 seconds to load and run (assuming the loader program is already loaded and waiting to be run); "Turbocharging" PowerPrint caused it to load and run in 53 seconds. That isn't ten times, but what an improvement. Converting a Basic program does not change it size, but the new version must be BRUN or BLOADed.

TurboLoad comes with two utilities: File Organizer which allows you to LOAD, RUN, LOCK, DELETE, CHANGE VOLUME HEADINGS, CHANGE BACKGROUND COLORS, etc. File Index which allows you to print an alphabetized report of your files, types, lengths and volume. Recommended.

Logo Program: FRTNWHL
by Jim Guenzel

Here is a game program called FRTNWHL modeled after the TV game Wheel of Fortune. If you have ever watched the TV show you already know the rules. First of all type in the three components, (FRTNWHL, PLAYFN & WORDSLIST1) according to the conventions of SmartlOGO. Such a project should be attempted by persons who already are familiar with LOGO.

After the program components have been entered and saved the program can be run after LOGO is loaded.

1. Enter: LOAD "FRTNWHL (RETURN)

2. When the program starts you will be asked the number of players. Enter the number (1 - 4).

3. You will be asked the number of the

WORDSLIST file to use. Enter a number (1 to 10} or a letter from "A" to "Z". if you have created additional files. Otherwise enter "1".

4. Next the program asks 1f the number of players and WORDSLIST is correct.

5. The program then asks for the name of each player.

6. After the last player's name 1s entered the program takes over and draws the game screen, erases it's procedures, loads the WORDSLIST file, and loads the main program that plays the game (PLAYFN).

7. PLAYFN then takes over and puts the first player's name up, puts a line of "*" up to represent the TYPE thing to solve. Hyphens and apostrophe's are displayed.

8. The message: KEY TO SPIN. BUTTON TO SOLVE, is flashed until either any key is pressed to start the spinner, or the RIGHT fire button on the game controller is pressed to indicate you wish to enter your solution.

COMMENTS: This game is slow because it takes a lot of memory, so I put in a lot of RECYCLE commands to keep from getting error messages.

If you do get an error while playing the game just enter RECYCLE and press RETURN, then enter INIT and press RETURN. This will restart the game with the same player, but with a new TYPE to solve.

If you get an error and want to restart at the point you got the error, type RECYCLE and RETURN, then enter the name of the "PROCEDURE you were in when the error occurred.

Making new WORDSLISTs is easy. Just do a TO WORDS. LIST in the same format as the WORDS. LIST procedure in the WORDSLIST file.

To change WORDLIST files while playing the game just hit the (ESCAPE/WP) Key. Then type RECYCLE (RETURN), LOAD the "WORDLIST file of your choice, enter WORDS. LIST (RETURN), ERASE WORDS. LIST (to free up memory), and enter INIT (RETURN) and the game starts again using the new file's list.

```
?POFILE "FRTNWHL
TO ; :COMMENT
END

TO LETTER.GUESS
MAKE "VOWEL.FLAG "CONSONANT
SETCURSOR [2 5] TYPE :P.VAL * 100 TYPE CHAR
32
SETCURSOR [1 15] TYPE [BUY VOWEL Y/N?]
MAKE "ANS RC
SETCURSOR [1 15] REPEAT 17 [TYPE CHAR 32]
IF :ANS = "Y [MAKE "VOWEL.FLAG "VOWEL]
```

```
IF NOT OR :ANS = "N : ANS = "Y [BEEP LETTER.GUESS]
SETCUKSOK [3 15] TYPE SE [YOUR] :VOWEL.FLAG
SETCURSOR [7 17]
MAKE "GUESS RW
SETCURSOR [7 17] TYPE CHAR 32
CHECK.LETTER
END

TO BEEP
TOOT 0 440 15 15
END

TO WELCOME
INIT.TURTLE HT
PRINT [WHEEL OP FORTUNE]
TYPE [HOW MANY PLAYERS  \(1 TO 4\)?] TYPE CHAR 32
MAKE "ANS ASCII FIRST RL
IF OR :ANS<49 :ANS>52 [BEEP CS WELCOME]
MAKE "NUM CHAR :ANS
PRINT [ENTER THE NUMBER OR LETTER] PRINT [OF THE WORDSLIST TO USE]
   PRINT [(1 TO 9 OR A TO Z )] MAKE "WORDSLIST WORD "WORDSLIST RC
CS SETCURSOR [4 4] TYPE SE :NUM "PLAYERS
SETCURSOR [4 6] TYPE :WORDSLIST
SETCURSOR [6 8]  TYPE [(Y / N)?]
MAKE "ANS RC
IF :ANS = "Y [PLAYERS.NAMES :NUM]
BEEP WELCOME
END

TO RW
OP FIRST RL
END

TO PLAYERS.NAMES :NUM
CS MAKE "CNT 1
PRINT SE :WORDSLIST [WILL BE LOADED] PR []
PRINT [ENTER PLAYER NAMES.]
PRINT [] MAKE "PLAYER.LIST []
REPEAT :NUM [PRINT SE [PLAYER NUMBER] :CNT MAKE "ANS RW MAKE "PLAYER.LIST
   LPUT :ANS  :PLAYER.LIST MAKE "CNT :CNT+1 PPROP "SCORE :ANS 0]
DRAW.SCREEN
END

TO INIT.TURTLE
ERDS THAW
TELL ALL
CS HT SETSH 36
SETC 15
SETPC 15 PD
SETBG 5
TELL 0 ST
SETTEXT 0
END

TO DRAW.SCREEN
```

```
INIT.TURTLE SETTEXT 23
WRAP CS HT TELL 0 ST SETC 1 SETPC 12
PU FD 25 LT 9 PD FD 70 BK 70
RT 18 FD 70 BK 70
REPEAT 4 [RT 36 FD 70 BK 70]
RT 18 FD 70 BK 70
REPEAT 4 [RT 36 FD 70 BK 70] PU
SETHEADING 0
FD 70 SETHEADING 270 PD CIRCLEL 70 PU SETHEADING 0 BK 70

SETCURSOR [2 0] PRINT [PLAYER]
SETCURSOR [24 0] PRINT [TYPE]
SETCURSOR [2 4] PRINT [VALUE:]
TELL 7 SETSH 7 PU FD 80 LT 90 FD 123 PD SETPC 15 REPEAT 10 [STAMP BK 8] PU BK 90 PD
    REPEAT 10 [STAMP BK 8] PU HOME
FD 50 LT 90 FD 105 PD REPEAT 6 [STAMP BK 6] PU HOME
BK 30 LT 90 FD 123 SETPC 7 PD REPEAT 20 [STAMP BK 14 STAMP] PU HOME
BK 46 LT 90 FD 123 SETPC 15 PD REPEAT 20 [STAMP BK 14] PU HOME
BK 87 LT 90 FD 123 SETPC 11 PD REPEAT 20 [STAMP BK 14] RT 90 FD 15 LT
90 REPEAT 20 [STAMP BK 14] PU HOME
SETCURSOR [14 1] TYPE "BR SETCURSOR [10 2] TYPE "200 SETCURSOR [17 2]
TYPE "300 SETCURSOR [8 5] TYPE "400 SETCURSOR [20 5] TYPE "500 SETCURSOR [7 9]
    TYPE "600 SETCURSOK [20 9] TYPE "700 BETCURSOR [8 13] TYPE "800
    SETCURSOR [19 13] TYPE "900 SETCURSOR [12  14] TYPE "1000 SETCURSOR [16 13]
    TYPE "L SETCURSOR [17 14] TYPE "T
TELL 0 COLOR.CIR
DISPLAY.PLAYERS
END

TO CIRCLEL :RADIUS
MAKE "STEP 2 * :RADIUS * 3.1416 / 36
REPEAT 36 [LT 5 FD :STEP LT 5]
END

TO COLOR.CIR
MAKE "C 1
REPEAT 6 [PU PD 20 SETPC :C PD FILL MAKE "C :C+2 BK 20 RT 32]
MAKE "C 10 SETHEADING 180
REPEAT 5 [PU FD 20 SETPC :C PD FILL MAKE "C :C-2 BK 20 RT 36]
PU
SETHEADING 0
END

TO DISPLAY.PLAYERS
MAKE "CNT 1 MAKE "C 2 MAKE "R 21
REPEAT :NUM [SETCURSOR SE :C :R TYPE ITEM :CNT :PLAYER.LIST MAKE "C :C+7 MAKE "CNT :CNT+1]
SETCURSOR [27 23]
RECYCLE PLAYFN
END

TO PLAYFN
ERPS
RECYCLE
SETCURSOR [0 15] TYPE [LOADING DATA] SETCURSOR [23 23]
LOAD :WORDSLIST
```

```
LOAD "PLAYFN
END

MAKE "STARTUP [WELCOME]
MAKE "ANS 51
MAKE "STEP 12.217333
MAKE "PLAYER.LIST []
MAKE "NUM "3
MAKE "R 21
MAKE "C 2
MAKE "CNT 1
MAKE "WORDSLIST "WORDSLIST1

NOPRINTER

?POFILE "PLAYFN
TO CHECKANS
RECYCLE
MAKE "LN 1
IF :N > :LENGTH [SETCURSOR [0 23] MAKE "N 1 MAKE "C 1 MAKE "R 17 ADD.SCORE]
REPEAT GPROP "COUNT WORD "LENGTH :N [IF EQUALP :GUESS ( ITEM :LN ITEM :N :WORD )
   [G.BEEP SETCURSOR SE :C :R TYPE :GUESS MAKE "SCR.CNT :SCR.CNT+1 MAKE "C
   :C+1 MAKE "LN :LN+1] [MAKE "LN :LN+1 MAKE "C :C+1]]
MAKE "N :N+1
MAKE "C :C+1
IF :C>27 [MAKE "C 1 MAKE "R 18]
CHECKANS
END

TO PROP.SCORE
MAKE "PLAYER ITEM :THIS :PLAYER.LIST
PPROP "SCORE :PLAYER :NEW.SCR
MAKE "C 2+7 * (-1+ :THIS)
SETCURSOR SE :C [22] TYPE :NEW.SCR REPEAT 6-COUNT :NEW.SCR [TYPE CHAR 32]
MAKE "C 1 MAKE "R 17
END

TO ADD.SCORE
IF :SCR.CNT=0 [LOSE.TURN]
IF :VOWEL.FLAG = "VOWEL [MAKE "P.VAL -0.5]
MAKE "GIVEN LPUT :GUESS :GIVEN
MAKE "PLAYER ITEM :THIS :PLAYER.LIST
MAKE "NEW.SCR ( GPROP "SCORE :PLAYER ) + ( :P.VAL * 100 * :SCR.CNT )
MAKE "SCR.CNT 0
PROP.SCORE
SPIN.POINTER
END

TO BUZZER :PREQ
IF :PREQ < 128 [STOP]
IF :PREQ > 9999 [STOP]
TOOT 2 :FREQ 15  6
NOISE 3 15 0 12 1
BUZZER :FREQ / :DV
END
```

```
TO SPIN.POINTER
IF RBUTTONP 0 [SOLVE.IT]
BEEP G.BEEP
SETCURSOR [0 23] TYPE [KEY TO SPIN. BUTTON TO SOLVE] RECYCLE
IF NOT KEYP [CT SPIN.POINTER]
MAKE "ANS RC
REPEAT 20 [SETH 1 + RANDOM 360]
FD 35 CT RECYCLE
POINTER.VAL
END

TO BANKRUPT
MAKE "DV 1.4
BUZZER 6000
MAKE "NEW.SCR 0
PROP.SCORE
MAKE "THIS :THIS + 1
DISPLAY.PLAYER :THIS
END

TO POINTER.VAL
MAKE "P.VAL COLOR.OVER BK 35
IF :P.VAL = 1 [BANKRUPT]
IF :P.VAL = 11 [LOSE.TURN]
IF :P.VAL > 11 [RT 5 FD 35 POINTER.VAL]
LETTER.GUESS
END

TO LOSE.TURN
MAKE "DV 1.7
BUZZER 8092
MAKE "THIS :THIS + 1
DISPLAY.PLAYER :THIS
END

TO SOLVE.IT
SETCURSOR [4 15] TYPE [ENTER YOUR SOLUTION:] BEEP G.BEEP SETCURSOR [1 19]
RECYCLE
MAKE "ANS RL
SETCURSOR [4 15] REPEAT 21 [TYPE CHAR 32]
IF NOT :ANS = :WORD [SETCURSOR [0 19] REPEAT 56 [TYPE CHAR 32] SETCURSOR [1 15]
    REPEAT 20 [TYPE CHAR 32] LOSE.TURN]
RECYCLE REPEAT 15 [G.BEEP]
SETCURSOR [4 15] TYPE SE ITEM :THIS :PLAYER.LIST [YOU WIN!!] REPEAT  10 [TYPE CHAR 32]
WAIT 200 RECYCLE SETCURSOR [0 15] REPEAT 56 [TYPE CHAR 32] SETCURSOR [.1 15]
G.BEEP TYPE  [PLAY ANOTHER ROUND Y / N?]
MAKE "ANS RC
IP :ANS = "Y [SETCURSOR [0 15] REPEAT 27 [TYPE CHAR 32] SETCURSOR [0 17] REPEAT 56
    [TYPE CHAR 32] MAKE "THIS :THIS +  1 INIT]
IF :ANS = "N [SETTEXT 0 CS OP]
BEEP SETCURSOR [1 15] TYPE [< Y > OR < N >] WAIT 120 SOLVE.IT
END

TO WORDS
SETCURSOR [0 18] REPEAT 56 [TYPE CHAR 32] SETCURSOR [27 23]
```

```
MAKE "WORD.NUM ( 1 + RANDOM COUNT :WORDS )
IF 0 = REMAINDER :WORD.NUM 2 [MAKE "WORD.NUM :WORD.NUM - 1]
MAKE "NTYPE ITEM :WORD.NUM :WORDS
MAKE "NWORD ITEM :WORD.NUM + 1 :WORDS
IF :NWORD = :WORD [OP WORDS]
OP :NWORD
END


TO GIVEN
IF MEMBERP :GUESS :GIVEN [BEEP SETCURSOR [2 15] TYPE [ALREADY PICKED!!]
   WAIT 100 SETCURSOR [2 15] REPEAT 17 [TYPE CHAR 32] BEEP BEEP LOSE.TURN]
CHECK ANS
END


TO G.BEEP
TOOT 0 370 10 8
TOOT 1 500 10 10
END


TO DISPLAY.PLAYER :THIS
IF :THIS > :NUM [MAKE "THIS 1]
RECYCLE G.BEEP SETCURSOR [2 2] TYPE ITEM :THIS :PLAYER.LIST
REPEAT ( 6 - COUNT ITEM :THIS :PLAYER.LIST ) [TYPE CHAR 32]
SPIN.POINTER
END


TO DISPLAY.WORD
MAKE "LN 1
IF :N > :LENGTH [SETCURSOR [25 23] MAKE "N 1 DISPLAY.PLAYER :THIS]
REPEAT GPROP "COUNT WORD "LENGTH :N [IF OR ( ITEM :LN ITEM :N :WORD )
   ="- ( ITEM :LN ITEM :N :WORD ) = "' [TYPE ( ITEM :LN ITEM :N :WORD )
   MAKE "LN :LN + 1] [TYPE "* MAKE "LN :LN + 1]]
TYPE CHAR 32
MAKE "N :N + 1 G.BEEP
DISPLAY.WORD
END


TO DISPLAY.NTYPE
SETCURSOR [21 2] TYPE :NTYPE REPEAT 2 [TYPE CHAR 32]
SETCURSOR [1 17]
MAKE "N 1
DISPLAY.WORD
END


TO INIT
RECYCLE
MAKE "GIVEN []
MAKE "C 1
MAKE "R 17
MAKE "SCR.CNT 0
MAKE "N 1
MAKE "WORD WORDS
MAKE "LENGTH COUNT :WORD
REPEAT :LENGTH [PPROP "COUNT WORD "LENGTH :N COUNT ITEM :N :WORD MAKE "N :N + 1]
MAKE "N 1
```

```
SETCURSOR [0 15] REPEAT 110 [TYPE CHAR 32] SETCURSOR [0 15]
DISPLAY.NTYPE
END

TO FIRST.INIT
WORDS.LIST
MAKE "THIS 1
MAKE "WORD "
ERASE ["WORDS.LIST "FIRST.INIT]
INIT
END

TO ; :COMMENT
END

TO LETTER.GUESS
RECYCLE
MAKE "VOWEL.FLAG "CONSONANT
BEEP BEEP SETCURSOR [2 5] TYPE  :P.VAL * 100 TYPE CHAR 32
SETCURSOR [8 15] TYPE [BUY VOWEL Y / N?] RECYCLE
MAKE "ANS RC
SETCURSOR [8 15] REPEAT 17 [TYPE CHAR 32]
IF :ANS = "Y [MAKE "VOWEL.FLAG "VOWEL RECYCLE]
IF NOT OR :ANS =  "N :ANS = "Y [BEEP LETTER.GUESS]
SETCURSOR [8 15] G.BEEP TYPE SE [YOUR] :VOWEL.FLAG G.BEEP RECYCLE
SETCURSOR [14 16]
MAKE "GUESS RW
SETCURSOR [14 16] TYPE CHAR 32
IF AND MEMBERP :GUESS [A E I 0 U] :VOWEL.FLAG = "CONSONANT [BEEP SETCURSOR [8 15]
    TYPE  [CONSONANT PLEASE.] WAIT  120 SETCURSOR [8 15] REPEAT 18
    [TYPE CHAR 32] LETTER.GUESS]
RECYCLE
IF AND NOT MEMBERP :GUESS [A E I 0 U] :VOWEL.FLAG = "VOWEL [BEEP SETCURSOR [8 15]
    TYPE [VOWEL PLEASE.] WAIT 100 LETTER.GUESS]
RECYCLE
GIVEN
END

TO BEEP
TOOT 0 440 11 20
END

TO RW
OP FIRST RL
END

MAKE "STARTUP [FIRST.INIT]

?POFILE "WORDSLIST1
TO WORDS.LIST
MAKE "WORDS [QUOTE [PLAY IT AGAIN SAM] THING [LABORATORY] PHRASE [ALL ABOARD]
    PHRASE [FASTEN SEATBELTS] PHRASE [COME AND GET IT] PERSON [PAUL ANKA]
    THING [FROSTY THE SNOWMAN] PLACE [HERNANDO'S HIDEAWAY]
  PHRASE [GOOD TO THE LAST DROP] THING [CROSSWORD PUZZLE] PERSON [JOHNNY APPLESEED]
      PERSON  [CHRISTMAS  TREE  FARMER]  PHRASE  [UNSAFE  AT  ANY  SPEED]  THING  [COLOR
```

TELEVISION]
    THING [MARRIAGE LICENSE] THING [FLUORESCENT LIGHT] THING [FLOWERING HOUSE PLANT]
    TITLE [THE PRIVATE LIFE OF HENRY VII] TITLE [FIBBER MCGEE AND MOLLY]
    PHRASE [TOAST OF THE TOWN] THING [KEY TO THE CITY] TITLE [THE THIN MAN]
    PERSON [ED SULLIVAN] THING [JIGSAW PUZZLE] PHRASE [THE WHOLE TRUTH AND NOTHING
    BUT THE TRUTH] THING [SOCIAL SECURITY] PHRASE [THE GRASS IS GREENER ON THE OTHER
    SIDE OF THE FENCE] PHRASE [GOOD THINGS COME IN SMALL PACKAGES] PHRASE [CLOTHES
    MAKE THE MAN] PERSON [ROBERT REDFORD] PHRASE [VOID WHERE PROHIBITED]
    THING [SIGNATURE] THING [CHARGE CARD]]
END

ADAM OUTLET

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All prices are given in U.S. funds. Canadian orders should be in U.S. funds or equivalent. Orders to other foreign countries add $2 for each disks and $3 for each data pack to cover overseas shipping.

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CONVERT is a utility program that allows you to transfer information from other CP/M single-sided double-density disk formats to the ADAM CP/M disk format. **CONVERT** allows you to read and write to disks that are In the following formats: Zenith 100 CP/M 85 SSDD; TRS-80 Model IV CP/M+ SSDD; and IBM CP/M-86 SSDD.
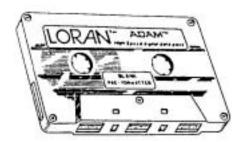
Your ADAM can only run programs that are CP/M 2.2 compatible. These programs are commonly called generic CP/M 2.2 programs. ADAM cannot generally run programs that were written for other versions of CP/M or that have been specifically configured for another computer. Most dealers and suppliers of CP/M programs have the capability of supplying CP/M 2.2 software on a variety of disk formats. Unfortunately, few companies can supply such software In the ADAM format. Most companies can supply CP/M 2.2 software In the formats that **CONVERT** can read. When buying such software make sure that you get a generic CP/M 2.2 version copied to one of the formats listed above. DO NOT buy CP/M+, CP/M 85 or CP/M 86 software. You will probably need to tell the dealer that your computer 1s a Z80, 8 bit system, to help avoid any confusion.

CONVERT requires at least one disk drive and one data drive. The best arrangement is to have two disk drives, although this is not necessary.

In addition to copying programs from the three formats to the ADAM format, you can also transfer data files. How does **CONVERT** work? **CONVERT** reads the necessary tracks of one disk and manipulates the information in order to put it into the format ADAM needs. **CONVERT** copies an entire disk. If you do not need all of the Information copied, you can use CP/M to delete that information.

CONVERT may be obtained directly from Sage Enterprises for $34.95 plus $2.00 for shipping/handling (Missouri customers should include sales tax). To order send a check/money order to Sage Enterprises, Rt. 2, Box 211, Russellvllle, MO 65074. Sorry no COD's or charge cards. If you have additional questions please feel free to call us Monday, Tuesday, Thursday or Friday from 9:00 am to 4:00 pm CT at 314/782-3448.

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